

Attorney Docket No.: 018/258C

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Date: November 3, 2003

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Number of pages including cover: 11 (last page marked)

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Transmittal & Response to Restriction

Requirement/Preliminary

Amendment for

USSN 09/990,080

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PTO/SB/21 (08-03)

Approved for use through 07/31/2008. OMB 0851-0031

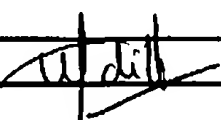
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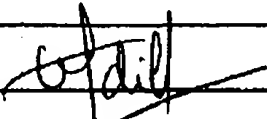
TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/990,080	
	Filing Date	November 21, 2001	
	First Named Inventor	Gregg B. Morin	
	Art Unit	1632	
	Examiner Name	Anne Marie Falk	
Total Number of Pages in This Submission	9	Attorney Docket Number	018/258C

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request (in duplicate) <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) (in duplicate) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks 1. Response to Restriction Requirement and Preliminary Amendment (7 pages)		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	J. Michael Schiff, Registration No. 40,253
Signature	
Date	MICHAEL SCHIFF Nov 3/03

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Signature	MICHAEL SCHIFF	Date	November 3, 2003

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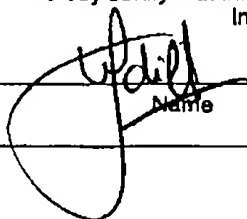
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Name

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: Gregg B. Morin

Filing Date: November 21, 2001

Serial No: 09/990,080

Docket: 018/258c

Title: INACTIVE VARIANTS OF THE HUMAN
TELOMERASE CATALYTIC SUBUNIT

Art Unit: 1632

Examiner: Anne Marie Falk, Ph.D.

RESPONSE TO RESTRICTION REQUIREMENT
AND PRELIMINARY AMENDMENT

Commissioner for Patents
Alexandria VA 22313

Dear Sir,

This paper is responsive to the Restriction Requirement mailed on October 3, 2003, for which a shortened statutory period for reply is set to expire on November 3, 2003. Accordingly, this paper is timely filed.

Please enter the following amendments and remarks.

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CLAIM AMENDMENTS

1. *(Currently amended)* A protein, peptide, or peptide mimetic that inhibits human telomerase, which either:
 - a) has a sequence comprising at least 10 consecutive amino acids ~~encoded by~~ in SEQ. ID NO:2, or encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of a sequence complementary to SEQ. ID NO:1; but which contains one or more deletions consisting essentially of residues 560-565, residues 930-934, or at least 10 consecutive amino acids from residues 323-450, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2; or
 - b) has a sequence consisting essentially of FFYVTE (SEQ. ID NO:3); FYVT (SEQ. ID NO:5), or at least 10 consecutive amino acids from YGVLLKTHCPLRAA (SEQ. ID NO:4).
2. *(Currently amended)* The protein, peptide, or peptide mimetic of claim 1, which has a sequence comprising at least 10 consecutive amino acids ~~encoded by~~ in SEQ. ID NO:2, or encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of a sequence complementary to SEQ. ID NO:1; but which contains one or more deletions consisting essentially of residues 560-565, residues 930-934, or at least 10 consecutive amino acids from residues 323-450, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2.
3. *(Currently amended)* The protein, peptide, or peptide mimetic of claim 2, which has a sequence comprising at least 25 consecutive amino acids ~~encoded by~~ in SEQ. ID NO:2; but which contains one or more deletions consisting essentially of residues 560-565, 930-934, 323-450, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2.
4. *(Original)* The protein, peptide, or peptide mimetic of claim 2, which comprises full-length human telomerase amino acid sequence, except for said deletion(s).
5. *(Original)* The protein, peptide, or peptide mimetic of claim 2, which is a dominant negative mutant.
6. *(Original)* The protein, peptide, or peptide mimetic of claim 5, which binds human telomerase RNA component but lacks processive telomerase activity.
7. *(Original)* The protein, peptide, or peptide mimetic of claim 5, which binds human telomeres but lacks processive telomerase activity.

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8. *(Original)* The protein, peptide, or peptide mimetic of claim 1, which has a sequence consisting essentially of FFYVTE (SEQ. ID NO:3); FYVT (SEQ. ID NO:5), or at least 10 consecutive amino acids from YGVLLKTHCPLRAA (SEQ. ID NO:4).
9. *(Original)* The peptide mimetic of claim 8, wherein one or more linkages between consecutive amino acids in the mimetic is $-\text{CH}_2\text{NH}-$, $-\text{CH}_2\text{S}-$, $-\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-$, $-\text{C}(=\text{O})\text{CH}_2-$, $-\text{CH}(\text{OH})\text{CH}_2-$, or $-\text{CH}_2\text{SO}-$.
10. *(Original)* A method of inhibiting telomerase catalytic activity, comprising introducing a protein, peptide, or peptide mimetic according to claim 1 into an environment containing telomerase reverse transcriptase.
11. *(Original)* A method of inhibiting telomerase catalytic activity, comprising introducing into an environment containing telomerase reverse transcriptase and telomerase RNA component a means that inhibits binding of the transcriptase to the RNA component.
12. *(Original)* A method of inhibiting telomerase catalytic activity in a cell, comprising expressing in the cell a nucleic acid encoding a protein or peptide according to claim 2.
13. *(New)* A protein, peptide, or peptide mimetic that is a dominant negative mutant of human telomerase reverse transcriptase having a means for inhibiting telomerase activity.
14. *(New)* The protein, peptide, or peptide mimetic of claim 13, which comprises a means for binding telomerase RNA component, but which lacks telomerase catalytic activity.
15. *(New)* The protein, peptide, or peptide mimetic of claim 13, which lacks a means for binding telomerase RNA component.
16. *(New)* The protein, peptide, or peptide mimetic of claim 14, wherein the telomerase inhibition means comprises at least 10 consecutive amino acids encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of a sequence complementary to SEQ. ID NO:1; but which contains one or more deletions consisting essentially of residues 560-565, residues 930-934, or at least 10 consecutive amino acids from residues 323-450, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2.
17. *(New)* The protein, peptide, or peptide mimetic of claim 14, wherein the telomerase inhibition means comprises at least 25 consecutive amino acids in SEQ. ID NO:2, but contains one or more

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deletions consisting essentially of residues 560-565, residues 930-934, or at least 10 consecutive amino acids from residues 323-450, 637-660, 748-766, 1055-1071, or 1084-1116.

18. *(New)* The protein, peptide, or peptide mimetic of claim 15, wherein the telomerase inhibition means has a sequence consisting essentially of FFYVTE (SEQ. ID NO:3).
19. *(New)* The protein, peptide, or peptide mimetic of claim 15, wherein the telomerase inhibition means has a sequence consisting essentially of FYVT (SEQ. ID NO:5).
20. *(New)* The protein, peptide, or peptide mimetic of claim 15, wherein the telomerase inhibition means has a sequence consisting essentially of at least 10 consecutive amino acids in YGVLLKTHCPLRAA (SEQ. ID NO:4).

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REMARKS

Claims 1-12 were originally presented in this application, and are now subject to a Restriction Requirement under 35 USC § 121. By way of this amendment, claims 13-20 are added, and claims 1-20 are pending.

Amendments

Entry of the claim amendments does not introduce new matter into the disclosure. Support for the new claims may be found at various places in the disclosure: for example, page 4, lines 31-33, page 6 line 40 to page 7 line 2; page 8, line 11 to page 9, line 31; and claims 1-12 as previously presented.

Claims 13-15 express properties of the claimed protein, peptide, or peptide mimetics as a means for inhibiting telomerase activity, and/or a means for binding telomerase RNA component, without the recital of structure, material, or acts in support thereof. This is in accordance with the provisions of 35 USC § 112 ¶ 6.

Election of Group for Examination

Claims 1-12 are subject to a Restriction Requirement under 35 USC § 121 between claims in four groups.

Group I (a protein, peptide, or peptide mimetic having a sequence comprising 10 consecutive amino acids-in SEQ. ID NO:2, or encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of a sequence complementary to SEQ. ID NO:1) is hereby elected for examination on the merits.

Claims 1-7 and 9-12 encompass products in the elected group. New claim 13 is generic to all four groups. New claims 14, 16, and 17 also encompass products in the elected group.

Traverse of Restriction Requirement

Applicant respectfully traverses the restriction requirement.

The Action dated October 3, 2003, indicates that the Office will not examine more than one sequence in an application, because of the continued exponential increase in size of the sequence databases to be searched for each sequence, resulting in a corresponding increase in computer search time and examiner time for reviewing the computer search results.

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Applicant sympathizes with the Office that the task of doing full sequence analysis is a substantial task. However, it is not true in this instance that the claims attempt to cover a plurality of unrelated sequences.

Attached to this Amendment is a paper showing that SEQ. ID NOs:3, 4, and 5 are embedded in the human TERT amino acid sequence (SEQ. ID NO:2). Furthermore, SEQ. ID NO:5 is embedded in SEQ. ID NO:3. Accordingly, the Office need only conduct a search and examination with respect to fragments and variants of human TERT (a single species) in order to consider the patentability of the full scope of all the pending claims in this application.

These remarks are not meant to reflect on whether SEQ. ID NOs:1-5 are patentably distinct — only to show that all four groups can be examined together without undue burden on the Office or the Examiner.

Withdrawal of the restriction requirement is respectfully requested.

Request for Rejoinder:

Claim 13 is generic claim that links products in all four groups. In the event that the restriction requirement is maintained, applicant requests that claims in Groups II, III, and IV be rejoined into the group under examination, upon determination that claim 13 is free of prior art.

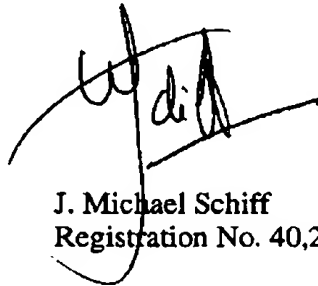
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Conclusion

Applicant respectfully requests that the application proceed to examination on the merits .

In the event the Examiner determines that an interview would facilitate prosecution of this application, she is invited to contact applicant's representative by telephone.

Respectfully submitted,



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Registration No. 40,253

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November 3, 2003

APPENDIXHuman Telomerase Reverse Transcriptase
Amino Acid Sequence

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1  MPRAPRCRAV  RSLLRSHYRE  VLPLATFVRR  LGPQGWRLVQ  RGDPAAFRAL  VAQCLVCVPW
61  DARPPPAAPS  FRQVSCLKEL  VARVLQRLCE  RGAKNVLAFG  FALLDGARGG  PPEAFTTSVR
121 SYLPNTVTDA  LRGSRAWGLL  LRRVGDDVLV  HLLARCALFV  LVAPSCAYQV  CGPPLYQLGA
181 ATQARPPPHA  SGPRRRLGCE  RAWNHSVREA  GVPLGLPAPG  ARRRGGSASR  SLPLPKRPRR
241 GAAPEPERTP  VGQGSWAHPG  RTRGPSDRGF  CVVSPARPAE  EATSLEGALS  GTRHSHPSVG
301 RQHHAGPPST  SRPPRPWDTP  CPPVYAETKH  FLYSSGDKEQ  LRPSFLLSSL  RPSLTGARRL
361 VETIFLGSRP  WMPGTPRRLP  RLPQRYWQMR  PLFLELLGNH  AQCPYQWELK  TECPALRAEVT
421 PAAGVCAREK  PQGSVAAPPE  EDTDPRRLVQ  LLRQHSSPWQ  VYGFVRACLR  RLVPPGLWGS
481 RHNERRFLRN  TKKFISLGKH  AKLSLQELTW  KMSVRDCAWL  RRSPGVGCVP  AAHRLREEI
541 LAKFLHWLMS  VYVVELLRSE  FWNTETTTFQK  NRLFYRKSV  WSKLQSIGIR  QHLKRVQLRE
601 LSEAEVRQHR  EARPALLTSR  LRFIPKPDGL  RPIVNMDYVV  GARTFRREKR  AERLTSRVKA
661 LFSVLNYERA  RRPGLLGASV  LGLDDIHRW  RTFVLRVRAQ  DPPPELYFVK  VDTVGYDTI
721 PQDRLTEVIA  SIIKPQNTYC  VRRYAVVQKA  AHGHVRKAFK  SHVSTLTDLQ  PYMRQFVAHL
781 QETSPLRDAV  VIEQSSSLNE  ASSGLFDVFL  RFMCHHAVRI  RGKSYVQCQG  IPQGSILSTL
841 LCSLCYGDME  NKLFAIRRD  GLLRLVDDF  LLVTPHLTHA  KTFRLTLVRG  VPEYGCVVNL
901 RKTVMNFPVE  DEALGGTAFV  QMPAHGLFPW  CGLLLDTRTL  EVQSDYSSYA  RTSIRASLTF
961 NRGFKAGRM  RRLFGVLRL  KCHSLFDLQ  VNSLQTVCTN  IYKILLQAY  RFHACVLQLP
1021 FHQQVWKNPT  FFLRISDTA  SLCYSILKAK  NAGMSLGAKG  AAGPLPSEAV  QWLCHQAFLL
1081 KLTRHRVTYV  PLLGSLRTAQ  TQLSRKLPGT  TLTALEAAAN  PALPSDFKTI  LD

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